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RESULTS of DIFFERENT PRINCIPLES of LEGISLATION and ADMINISTRATION in EUROPE; of COMPETITION FOR the FIELD, as compared with COMPETITION WITHIN the Field, of Service. By EDWIN CHADWICK, Esq., C.B.

[Read before the Statistical Society of London, 18th January, 1859.]

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I SOLICIT the attention of the Fellows of the Society to the following statistical table:—

1	2	3	4	5
COUNTRY.	Population per Statute Square Mile.	Average Cost of Railways per Mile.	Average Working Expenses per Mile.	Average Earnings per Mile.
England, 1857	304	£ 39,275	£ 1,564	£ 3,161
France, 1854	168	25,668	1,191	2,706
Belgium 1856	337	16,391	1,259	2,158
Prussia, 1857	138	14,486	1,248	1,983
Austria, 1857 ..	143	18,465	1,239	2,686
Germany, 1857 ....	....	13,232	898	1,417 *

* The average cost of coke per mile travelled is, in Germany 4s. 8d.; in England it is 2s. 9d.

	6	7	8	9	10	11	12
COUNTRY.	Average Fares per Mile.			Average Payment per Cent. to Original Shareholders.	Proportion of Accidents and Injuries to Persons Carried.	Number of Times Less Dangerous than England.	
	1st Class.	2nd Class.	3rd Class.				
England, 1857 ...	d. 2·01	d. 1·41	d. ·87	{ 3·88* 4·26‡ }	1 in 183,903†	....
France, 1854	1·55	1·16	·84	6·58‡	1 ,, 1,375,092	7 times.	
Belgium, 1856 ...	1·33	1·0	·65	5·48‡	1 ,, 1,611,237	9 ,,	
Prussia, 1857 ...	1·4§	1·15	·77	7·44‡	1 ,, 3,294,075	16 ,,	
Austria, 1857	1·4	1·1	·83	6·75‡	....	....
Germany, 1857 ....	....	....	....	5·52‡	....	....

* Proportion per Cent. of Net Receipts, less interest, on Preference Shares and on Loans, to the ordinary Share Capital; but other returns give it as 3·12.

† Out of 405 cases of so-called Accidents, inquired into from 1853 to 1857, only 43, or 1 out of 10, was reported upon as having arisen apparently from causes beyond control. The great bulk of Accidents were reported to have arisen, not from the neglect of the inferior officers, but from the insufficient regulations, or want of discipline, or misplaced parsimony of the Directors and superior officers.

‡ Proportions per Cent. of Net Receipts to the total Capital Expended; Governmental and private, but the returns to the private Companies in France is at 9 per cent.

§ In Prussia and the rest of Germany the proportion of passengers is, of the 1st class, 1·7 per cent.; 2nd class, 23 per cent.; 3rd class, 75·3 per cent. In England it is, 1st class, 13·5 per cent.; 2nd class, 31·6 per cent.; 3rd class, 54·9 per cent. "But it is to be recollected," says Captain Douglas Galton, "that in Germany the 2nd class is as comfortable as our 1st class." The same may be said of most of the continental 2nd class carriages.

I.—Examples of Statistical Indications of Fundamental Errors in Legislation, and of Aids derivable from Economic Science for the advancement of Statistical Science.

I will, in the first place, ask them to consider what the figures in this table,—which I submit, as a statistical and administrative study,—separately or connectedly, denote? what conclusions may be deduced from the figures of the chief columns as they are presented alone and without verbal explanations, to those who are unaccustomed to statistical studies? I ask this because the answer may, as I conceive, lead to the consideration of the additional operations, which are requisite for the public information, namely, the analyses of the facts, denoted by the items or units of figures of which statistics are composed—the economical analyses of the elementary

facts which those units partially represent;—in short, the application of economical science, to guide their accumulation and to render them profitable to the public. I might fill a whole number of the Society's publication with the tables of figures of which I here give only the totals. But laboriously prepared statistical tables are too often presented without any totals, much less any reduction, to determinate elementary standards, often indeed without reference to any economical principles whatsoever. Some years ago, before our mortuary registration was got into operation in England, I obtained the mortuary statistics of the chief States of Continental Europe,—France, Prussia, Austria, Russia. I found that the whole accumulations had gone on for years untotaled. In that condition I need not say that they were, for mental vision, only so many fogs. No one Government then knew the positive or relative sanitary and physical condition of the population which it governed. I had, I believe for the first time, the mortuary returns of several of these States, of which Russia was one, totaled and referred to the commonest elementary standard.

In the celebrated conversation reported with Sir Hamilton Seymour, wherein the late Emperor Nicholas expressed his concern for the "sick man" the Turk, he avowed as an undeniable fact and a ground for his neighbourly interest, that within his own dominions, in the general condition of his own subjects, there was every reason for contentment, for they were most happily situated. We statisticians knew that the death rate denotes a sum of moral as well as the general sum of the physical conditions of a nation. One groans at the tremendous delusion under which the destinies of populations are governed, but which would be removed by an understanding of the statistical standard and a reference to it, which would have shown the Emperor that the general condition of his own subjects, with which he was so well satisfied, needed his first care, before seeking dominion over others,—that condition being the lowest and most wretched of all Europe,—the chief European death-rate in Russia, being—to use later confirmatory totals got out by Dr. Farr—3·590 per cent., Austria 2·985, Prussia 2·658, France 2·397, England 2·207; and England itself I have shown to be a case of positive wretchedness, of an average loss of ten or twelve years of life to all born; and a slaughter of upwards of 160,000 per annum, beyond practically attained sanitary standards. Now, the getting out of the death rates and enquiries into the causes of the differences of the rates between district and district, nation and nation, and between class and class, will no doubt tend to elicit elementary facts of sanitary science;—but I might show that for the further progress of the mortuary branch of statistics the light of sanitary science and analysis will be requisite.

In respect to another branch of statistics and of economic science, to which the table now under consideration belongs, it may be averred that the results imply bad conditions of legislation and administration, of which, however well Fellows of this Society, or others who have paid special attention to the branch of statistics, may be aware, manufacturing and populous constituencies particularly, and even their representatives, are commonly as little sensible as was the Emperor of all the Russias of the general physical condition of his own subjects, and of the real value, statistically determined, of his own Government. The statistical table of comparative results of railway legislation and administration in Europe which I submit to you, may serve to indicate questions elicitive of elementary facts, for legislative, administrative, and economical sciences :—but the further advance of the branch of statistics must, I apprehend, be under the guidance of those other sciences.

The first question which naturally arises on the consideration of this table is, what are the causes of the difference of results against England which it presents? To this question several answers may be given;—as defective legislative principles;—defective administrative principles. But I shall endeavour to show that the master defect, from which the two others arise, is defective economic science and principle; or, in other words, public ignorance that there are different conditions of competition—sound and unsound; that whilst there are conditions of competition which ensure to the public the most responsible, the cheapest and best service, and which are requisite to improvements of the greatest magnitude, there are conditions of competition which create inevitable waste and insecurity of property, which raise prices and check improvement, which engender fraud and violence, and subject the public to irresponsible monopolies of the worst sort.

II.—*Economic Principle of regulated Competition for a Field, as opposed to Competition within a Field of Service, defined and exemplified in Legislation on the Railway Service of England and the Continent.*

I may, perhaps, best expound the principle by which the differences in result presented in this one table, and others from different branches of service are governed, if I relate the circumstances under which that principle was presented to me.

From 1838 to 1841, whilst examining the sanitary conditions of town populations, I found urban districts in England, where there are two or three sets of water-pipes carried through streets which might be as well or better supplied under one establishment, and competitions ending in strict monopolies, bad and deficient supplies at high charges to the public, with low dividends to the shareholders, and

an almost impracticability of improvement in their separate condition without augmenting the already excessive charges of the ratepayers or further reducing the low returns to the capitalists. These competitions are what I then designated as competitions "within the field of service." As opposed to that form of competition, I proposed, as an administrative principle, competition "*for* the field," that is to say, that the whole field of service should be put up on behalf of the public for competition,—on the only condition on which efficiency, as well as the utmost cheapness, was practicable, namely, the possession, by one capital or by one establishment, of the entire field, which could be most efficiently and economically administered by one, with full securities towards the public for the performance of the requisite service during a given period. The principle was, upon due consideration, extensively adopted and advocated by permanent public officers, commissioners and disinterested public investigators for the regulation of enterprises in railways, then at their commencement;* but the views chiefly advocated by speculators and persons who profit by multiplied conflicts—who gain whosoever else lose—were adopted by Parliament. The principle was, however, upon independent consideration, adopted by the continental administrators and legislators, and the results stand out in wide and undeniable contrast of legislative and administrative ability and integrity;—in France, for example, in a much more responsible and more regular service for the public at lower fares, with higher-priced materials, with dearer fuel, poorer, thinner, and less active population, and lower elements of traffic; and yet, with an average return of from seven to nine per cent. to the original shareholders of the lines worked by Companies. In England we have a clashing, immensely more dangerous, unsatisfactory, and generally less responsible service to the public, fares, as contrasted with the continental fares, generally one-third higher, with fuel, iron, and machinery cheaper, and population and traffic more active; yet with only an average return of 3·60 per cent. to the original shareholders, with extensive ruin to them—with gigantic fortunes to the promoters of conflicts. In France, the original shareholders have, moreover, the elements of security and further improvement to their property, whilst the French public have in reversion, on the termination of the present concessions, the prospect of further reductions of fares and increased facilities for intercommunication, or a new source of revenue, derivable from past economy in reduction of the general taxation of the country. In England, the greater mass of original shareholders have before them elements of further depreciation, and loss, and even ruin, by the bounty afforded by the practicability of

* *Vide*, amongst other expositions, that contained in the admirable report of Messrs. Drummond and Barlow, Commissioners for Railways in Ireland.

cheaper constructions and by competitive extensions, that are not to be averted by the patchings of quarrels or by any combinations of their respective directories,—whilst the public have the main arteries of communication—which ought with sound legislation to be as cheap and free as any in the world—clogged with inconveniences and even with delays as well with high charges, amounting to between six and seven millions per annum in excess at the present time, of what a sound administrative principle would have insured. The maladministration which has incurred the excessive outlays—which maintains nearly a hundred separate chief and independent establishments, at the expense of the shareholders, and to the inconvenience and loss of the public in working,—seeks to impose these excessive charges upon the public by high fares, and does so in defiance of the experience thus enunciated by an observer of railway administration, that “There is hardly an exception to the rule, that a high fare “produces a low amount of traffic and stunts its growth, while a low “or moderate fare collects a larger amount of traffic and fosters “growth.”*

III.—*Legislation on the service of the Supply of Water in London and of Gas at Paris.*

To the matter of these statements, the answers I usually meet with are, first, that but for the unregulated competition and the original expenses of English Railways, we should have had none at all; and secondly and impatiently, that what has been done cannot now be undone;—to which I reply that I do not admit the charge implied in the first answer, that a large and corrupt expenditure for obtaining Parliamentary sanction, is an essential and unavoidable condition of representative institutions; and as to the second objection, I have now to refer to the evidence of some experience proving that much of the existing evil may be undone, and much further impending mischief to such properties, as well as to the public, may be averted, by means of the administrative principle

* “Herepath’s Railway Journal” of 1st of January, 1859, cited with illustrations in Mr. Samuel Brown’s paper, printed in the Society’s *Journal* for June last. *The Engineer* states some of the admitted loss thus:—“But for the frightful waste of capital in the construction of our railways, the consequences of which are entailed perpetually on the people in the shape of high fares, moderate speed, and very inferior accommodation, we might, with the aid of proper improvements, be able to make the run from London to Liverpool regularly in three and a-half hours, and from London to Edinburgh as regularly in seven hours, and at a fare no greater, if as great, as that now charged. Under such circumstances there would, of course be separate lines for passengers and goods, and with a system of road-police, or signal-men, throughout the length of the lines, there would be even less danger of accident than at present.” On some of the public evils of separate railway establishments, *vide* report published by the Society of Arts on “a Parcel Post,” July 9, 1858.

which I have proposed. In analogous cases of the mischievous operation, to the public as well as to capitalists, of competitions permitted or encouraged "within the field of supply," my colleagues on several commissions could find no other remedy. For example, London in itself we found the field of service for a supply of Water, to which I have already adverted, divided amongst seven separate companies and establishments, of which six were originally competing within the field of supply, with two and three sets of pipes down many of the same streets, but which had become multiform monopolies, doling out supplies of water of inferior and often unwholesome quality, insufficient in quantity, although positively nearly three-fifths of it ran to waste during the intermittent periods of service. We found, although the fact was attempted to be denied, that fully 100,000*l.* per annum might be saved by a consolidation of establishments, which sum, capitalised, would have formed a fund for procuring a superior supply from entirely new sources, soft and pure, instead of hard and impure. It was our duty in this and similar instances, to submit what in the matters referred to us appeared to be the efficient remedies, whatsoever might be the interests opposed to their being carried, of which we could not be unaware. The administrative principle appeared to be beyond the time; and the loud reclamations chiefly of persons interested in separate establishments prevailed against the principle. Since then, as much money as would have sufficed to have obtained supplies of soft water of the highest purity has been expended by the separate companies in the partial improvement of a supply which is hard, essentially inferior in quality, consisting to a great extent, in times of rain, of ditch-delivered water, the surface washing of lands under increasing cultivation and high manuring; unsatisfactory in the mode of delivery, and at heavy charges to the consumers, with unsafe returns to the shareholders. Whilst I was in Paris in 1855, serving as one of the international jurors at the Great Exhibition, I was requested by the Society of Arts to act as one of a special committee appointed on the occasion of the visit at the instance of the president, his Royal Highness the Prince Consort, for the purpose of testing the principles upon which the acknowledged vast improvements lately made in the French metropolis have been carried on, and of considering how far they may with advantage be applied to our circumstances at home. My special attention was directed by the other Englishmen, as well as by my own interests, from the circumstances I have stated, to the principles of the administrative means by which the improvements had been effected in Paris. I found that the attention of the municipality had been directed to a case closely analogous to the water supply of London, namely, of the supplies of gas by seven independent

gas companies, when, upon competent and disinterested examination, directed by the Government in behalf of the people, the supplies were found to be bad, and the charges upon the actual cost of production of a really good gas to the consumers excessive. A consolidation had been effected precisely on the principle we had recommended for the improvement of the water supply for London; the service had been, in effect, as far as circumstances permitted, put up to competition for the whole field, and the consolidation of all the establishments had been effected under the best available direction, with the result of a considerable improvement of the quality of the gas supplied, a reduction of 30 per cent. upon the previous cost to the private consumers, of 40 per cent. to the public consumers, arising from reductions of establishment charges, and an improvement of 24 per cent. in the value of the shareholders' property.

In respect to one case of a competition of two Gas companies within a field of supply in the North of England, I had evidence that, whereas the prime cost of the manufacture of gas by those separate companies was more than 3*s.* per 1,000 cubic feet, the result of a competition for the whole field of supply by one establishment instead of two, was its being made at a prime cost of about 1*s.* 9*d.* per 1,000 cubic feet. It was out of the saving of a like difference that the results described at Paris were achieved.

IV.—*Legislation on the Continent and in England, for the Interment of the Dead.*

I had been previously aware that another example of the application of the principle of competition for the field has long been in operation in Paris for the service of Interring the dead. In London there are between 600 and 700 undertakers to perform about 120 funerals daily, being at the rate of upwards of six undertakers available as competitors for each funeral; and yet, under the circumstance of the occurrence of deaths, there being no time to seek about or to make inquiries to enable the parties to make a selection upon any comparison of charges, the service is practically a monopoly. The expense to the survivors of all classes above the class of paupers, and in particular to the most respectable class of mechanics, forms a grievous addition to the evils and inflictions of bereavement by death; and although the charges made are exorbitant, the character of the service rendered is in every respect of a low and objectionable character, and befitting an inferior religious, and social condition.* In the more densely peopled districts of London nearly 60 per cent. of the population die in the same room in which the survivors live and sleep. When a father of a family dies the body

* *Vide*, for full exemplifications, my "Report on the Practice of Interment in "Towns," 1843.

remains in the living and sleeping room of the survivors, commonly including children, whilst the widow is abroad seeking aid, or raising the money to defray the exorbitant expenses for what is called a respectable funeral, for days often after decomposition has commenced. On the consideration of the measure for extra-mural interment, the difficulty was presented to us of the probable aggravation of this evil of the retention of the body in the living or sleeping room of the survivors by the increased expense of the conveyance of the corpse and attendants to the distant place of extra-mural sepulture. On the continent, at Munich, at Frankfort, at Berlin, at Paris, we found these evils, at all events, mitigated, and often absolutely prevented by superior legislative and administrative measures, which were in accordance with the principle which had been independently suggested by a consideration of the facts; and my colleagues agreed with me, in the adoption of the principle in question, of competition for the field, instead of multiplied competition within the field of service, as presenting the only means of solving the chief difficulties by which we were met. But we could not get it even considered by Parliament, and the evils of the prolonged retention of the body in the living and sleeping rooms of the poorer classes remain and are often grievously aggravated by the delays consequent on the increased distances and unregulated charges of extra-mural interment.

The allowance made in burial clubs in England is from 5*l.* to 10*l.* for the funeral of an adult member. Some funerals are effected for 3*l.*; but 5*l.* may be taken as the general average expense of funerals to that class of the community. The range of expense, exclusive of the case of paupers, may be said to be from 3*l.* up to 100*l.* for persons in affluent circumstances; and from 300*l.* to 500*l.* for persons of rank; that is to say, under circumstances often of most indecent competition within the field, and competing fees or bribes, for influence to procure orders for the service.

In Paris, and also in some other cities of the continent, at intervals of terms of years sufficient for the renewal of carriages, establishments, &c., the entire field of service for the interment of the dead is put up to competition, for contracts to render the funeral service at scales of material, decoration and attendance, conformable to the habits and wishes of different classes of society, divided into nine classes, and the range of expense is from 15*s.* to 145*l.* English money; but these charges include a payment, as a tax, of upwards of 60 per cent. for the support of public worship. The expense of funeral in Paris, of the class generally used by respectable people, is in English money 14*l.* 4*s.* 5*d.*, for a description of funeral and service, which here, under the system of competition within the field, would incur more than double that amount of charge. I prefer our own

more simple Protestant funeral rites, and yet I beg to guard myself from the supposition that I advert slightly to the rites of the Roman Catholic Church. I am not dealing with a religious, but simply an economical question, and in that sense it may be complained that the common principle of competition within the field, in spite of express provisions of wills, augments the cost of our most simple rites, to persons of rank, to three, four, and five hundred pounds. Competition for the field ensures to the first-class Roman Catholics of Paris, the grandest service of their Church, including bearers of crosses, plumes, eighteen mourning coaches and attendants, the attendance of two vicars, besides the cure, and twenty-six priests, six singers and ten chorister boys, two instrumental performers, grand mass at church, and 120 lbs. of wax tapers, besides an anniversary service, and material of mourning cloth, at a cost of 145*l.* out of which, be it observed, the competitor for the service, the undertaker, pays more than one-half as tax. The absolute cost of 28,000 interments at Paris was 80,000*l.*, tax included. The estimated cost of the 45,000 interments in London, under the system of competition within the field, was 626,000*l.*, which was certainly an under estimate.* At the same rate as in Paris it would have been 166,000*l.* On an estimate of the expenses of a consolidation of the whole of the service, buying up existing cemetery companies, improving the character of the service at every point, I found that the whole might be accomplished at a charge of 250,000*l.*, for the annual number of interments at that time,—1843.

Under this system of competition for the field where it prevails on the Continent, the public have a superior service, and a wider range of choice, as well as much protection to survivors not afforded in this country. If there were time to describe all the incidents of this particular class of service, they would be found to present, in the strongest contrast, the characteristics of the two principles in question, and would show on our side, instead of the freedom, which unregulated competition is generally supposed to produce,—multiform monopolies, extortions, and corruption of the most foul description.

V.—Legislation on Internal Communication by Omnibuses in Paris and in London.

I found at Paris that the attention of the Municipality had also been turned to the service of Public Conveyance, which was in a state analogous to that in London, of vehicles provided by numerous conflicting small capitalists giving inconvenient, and, in every way inferior, service to the public. By authoritative intervention an

* *Vide* my "Report on the Practice of Interment," 1843, p. 70.

improvement was effected on the same principle as that effected in respect to the supplies of gas, and with the like results. A liberal value was put upon the stock of carriages and horses, and a liberal compensation made for "times," "way-leaves" of the nature of "good-wills for the positions acquired by the Omnibus Proprietors. The separate Proprietors were allowed either to take money awarded as compensation, or shares to the amount in the one new Company, which had made the best offer for the whole field of service. Some fifth of the proprietors preferred shares, and those who were deemed fit were preferentially employed under the new General Company. The immediate gain to the public was increased convenience, regularity, and freedom of communication, and a general system of correspondence and increased responsibility. Instead of, as in London, streets encumbered and disturbed by nearly empty, or only partially filled inferior vehicles, sometimes crawling with a few passengers, annoyed by detentions for a full load, at other times racing, and dangerously overladen, the circulation throughout Paris was made regular from regularly appointed stations, at fixed charges, which precluded extortionate variations. But I was particularly struck with the necessary effect of the change in the social relations of the men engaged in the reformed service, in the immediate suppression of that antagonistic relation, and its consequences, which we see most fully developed in London, in perpetual wolfish conflict, engendering habits of ruffianism, with extortionate yet precarious earnings spent in dissipation and without reserves for sickness and old age. The new arrangement in Paris presented the example of a number men brought from antagonism into a peaceable relation, regular action under a common interest and order, and which secured retired allowances and assured means of improved domestic conditions.*

* Having when in Paris expressed my approval of the principles involved in this consolidation, I was challenged to give my support to a measure for applying them in London by voluntary agreement. The times and good-wills of 600 out of 800 Omnibuses had been purchased at an expense of nearly one quarter of a million (to avoid oppositions) with the calculation that with the savings derivable from consolidation, the service could be greatly improved and made more popular. The improvement implied putting two thousand men in a better social position. I deemed it right to accept the position of a Member of the Council of Surveillance, which is substantially the same as that of an auditor of an English Company, with the same irresponsibility for the management. The French Company were improving the vehicles, extending accommodation, and reducing fares, getting better stabling for 6,000 horses, trying to get up a system of correspondence, which should include an improved conveyance on the river. They were endeavouring to introduce suburban tramways, which are in successful use at Paris and New York, by which the expense of conveyance in larger and more convenient carriages would be reduced one-third and the speed increased one-half; and were systematising the machinery for the internal communication of the Metropolis, in a manner, which if they had been supported, would have made it a superior work of adminis-

All these improvements, private and public, social and administrative, might be effected, and horses as well as men, capitalists and passengers, put into an improved position out of the savings from a part of the waste incurred by the competitions of small capital within the field of service. In London, the waste incident to management on a small scale by small owners, is full 10 per cent. By improved feeding, by machine-crushed oats, and other means practicable on the large scale, the saving in horse keep is proved to be about 2s. per horse per week. Out of this source of waste alone, on a competition for the entire field of service, it appeared that the British Metropolis might, under ordinary circumstances, be provided with systematised internal communication, improved beyond the present public conception or desires.* I am not prepared to state

tration;—when they were opposed by all the parochial authorities; opposition omnibuses were started against them in every quarter, on the cry that they were a monopoly—and a *French* monopoly. The opposition of the new omnibuses, intruded on the purchased good-wills, was met much in the old way—in the way of the English railway companies (and against which I myself had, as it happens, remonstrated) by the old English district managers; when an outcry was raised in the press and the police courts against the proceedings of the French Company as being un-English, and a prosecution was instituted against them for conspiring to oppose one set of the oppositionists, by the practice of nursing their omnibuses. When my name appeared as an auditor of the French Company, I gave public notice that I had no share and could have no share in the management, whether good or bad, which was by gerants. I was, however, selected for prosecution as a chief of the conspiracy against the oppositionists. Their case has concluded without even an allusion to my name. The French capitalists were compelled, after much loss and at a considerable sacrifice, and after having effected more improvements in two years than had been effected in the preceding twenty, to convert the Company into an English one, by which, it is to be hoped, the principle of consolidated management will be prosecuted against a grossly ignorant opposition, by which, if successful, extensive public improvements must be frustrated.

* The new Company by paying about a quarter of a million for “good-wills,” and liberally for the old vehicles and horse stock, got about 600, or three-fourths of the omnibuses of London. Those in their hands are worked by 6,000 horses, managed by a body of 2,000 men, drivers, conductors, horse keepers, &c. The working expenses of an omnibus, with its stud of ten horses, appeared to be 2*l.* 12*s.* 5*d.* per diem, driving fifty-five miles, at a prime cost of 11½*d.* per mile, at a profit of a little more than a penny farthing per mile, or 6*s.* per diem in ordinary times and when there was no opposition. The profit is dependent on outside passengers and fine weather. Of the daily expenses, 66 per cent. is for provender, 9 per cent. for horse care, 20 per cent. for coachman and conductor, 6 per cent. for mileage duty, 5 per cent. for the repairs of vehicles, and 2 per cent. for tolls, and the rest general charges. The total mileage worked by these three-fourths of the London omnibuses, averages 31,000 miles per diem. Comparing London and Paris as fields of service, London has a population of two million and a quarter, living in 300,000 houses, with about 1,560 miles of street and road communication, over six times the area of Paris, which has a million of population, living dreadfully over-crowded in 32,000 cesspool-tainted houses, and having less than 400 miles of street and road communication. The number of omnibuses in Paris is less than one-half the number of London, and they go about one-sixth slower, or little more than five miles an hour including stoppages.

that even in Paris the full advantages of consolidated management were secured to the public.

VI.—*Unregulated Competition in minor Conveyance: Cabs. Distinction between Regulated Payments for Services, and Free Exactions on Necessities.*

Whilst I was in Paris, some proceedings were initiated for applying to the service of Cabriolets the principle of administrative consolidation, which had been applied to the service of conveyance by omnibuses; but I then expressed my apprehension that obstacles would be presented in the difficulty of disposing of the surplus hands, whose labour would be saved by consolidation. The difficulty of dealing with the water carriers, whose labour would be superseded, has long impeded the improvement of the distribution of water into the houses of Paris by means of pipes and engine power. In truth the labour market of Paris is by no means so powerfully absorbent as that of London. An attempt to introduce an improved system of street cleansing, which would have interfered with the labour of chiffonniers, or rubbish collectors, was once made the occasion of riots which were attempted to be turned to party political account.

No material improvement has yet, however, been effected in the service of the smaller means of public conveyance in Paris. But the present condition of the Cab service of London is one which appears to me to be so prominently illustrative of the evils of the competition of multiplied capitals within the field of supply, against which the opposite principle is the only effective preventive, that I beg leave to advert to them. The number of cabs now licensed in London is 4,500. Each common cab and the two horses, with the appointments requisite to work it, is estimated to cost not more than 60*l.*, so that the capital engaged is in round numbers upwards of 270,000*l.*, provided by upwards of 1,800 small owners.

The waste of the capital committed by this competition within the field of supply is visible to the eye at all times and all weathers,—in full stands or long files, waiting hour after hour, and in the numbers crawling about the streets looking out for fares. The cost of the keep of each horse is estimated at 16*s.* 4*d.* per week: the depreciation of horse stock is put down at 2*s.* 6*d.* per week each, and of the vehicle at 8*s.* per week. The market value of the labour of such a man as the driver of a cab may be set down in London at 4*s.* per diem. The stable rent is at least 5*s.* per week per cab and horse, and with other minor items the capital invested for man, horse, and vehicle may be set down at about 1*s.* per hour lost during every hour, during which the cabs are kept unemployed. On every cab stand where in foul weather, as well as fair, a dozen cabs are seen constantly unemployed, the administrative economist, may see

capital evaporating in worse than waste, at a rate of 12*s.* per hour, 7*l.* 4*s.* per diem,—or at a rate of between two and three thousand pounds per annum, to be charged on some one, *i. e.*, the public. If all were employed, as the usual rate of driving is six miles per hour, they must be each employed at least four hours per diem to pay for their keep. If, however, the cabs were constantly employed daily;—at least, three horses must be employed, which would augment the charge by that of an additional horse at the rate of 4*d.* per hour. A large proportion of the cabs are employed during the whole 24 hours, but there are then two men, “a night man” and “a day man,” and three horses.

It is probably a statement greatly below the fact, that at least one-third of the cabs are, the week through, unemployed; that is to say, one-third of the invested capital is wasted;—a service for two capitals being competed for by three, to the inevitable destruction of one. As in other cases of competition within the field, efforts are made by violent manifestations of discontent at the legal fare, by mendacity and by various modes of extortion, to charge upon the public the expense of the wasted capital. Sometimes it is in the form of a piteous appeal, that the driver or the competitor has been out all day and has not before had “one single blessed fare.” And yet the legal charge for the commonly wretched service of the man, horse, and vehicle is, when taken by the hour, nearly double, and by the mile nearly treble (when only two horses per diem are used) its actual prime cost, which when driving, is at little more than six miles an hour, 2*d.* or 3*d.* per mile, and when waiting 1*s.* 4*d.* per hour. But there is now a cry from the cab proprietors that this charge of double the prime cost does not pay, as it probably does not under such a ruinous system. An appeal is proposed to Parliament for an augmentation of the fares; but such augmentations under this principle of competition within the field would only aggravate the evil, for it would lead to an increased number of competitors, and instead of there being a competition of three to do the work of two, there would be a competition of two or more to do the work of one, *i. e.*, a greater waste of capital to be paid for by some one.

Since the reduction of the Fares in 1852, the number of cabs in the metropolis, instead of being reduced has been increased from 3,297 to 4,507 in 1857.

If there were no legislative restraints, the extortion under the system of competition within the field would reach such a height as to go far to extinguish the service altogether, or confine it to cases of extreme necessity and very large means of payment. My friend, Mr. Henry Ashworth, of Bolton, in an account of his travels in America, gives an illustration of this state of things. Speaking of New York, he says, “They have their coach stand—coaches with

“two horses each, such as we formerly kept on hire, and the fares appear to be discretionary, or according to bargain. Upon a rainy day the sum of two dollars, or 8s. 4d., was demanded as the fare for half an hour. I offered one-half the sum, and it was declined. I then pointed the attention of the driver to the string of twenty other carriages, all waiting to be employed, and remarked upon the uncertainty of his making any money at all within the next half hour. He very coolly replied, ‘The rain is falling very fast, and ‘I guess I’ll spec it.’ He preferred to speculate upon the chances which might offer, and so I left him.”

Examples of perfectly unrestricted competitions within the field are presented amongst the Boatmen on the coast, when a belated traveller hurries from London, and presents himself to half a dozen or a dozen, say, of Deal boatmen, to be put on board a vessel just out of hail and on the point of starting. They see that unless the “fare” is put on board he will lose his passage-money and his voyage, and instances have occurred where not one boat was to be hired for less than five pounds or more, to put him on board, or perform a service for which, at the rate of wages of men in regular employment of the class of the boatmen, as many shillings would be most liberal, not to say exorbitant remuneration. At Liverpool, where emigrant passengers are frequently belated, ships being delayed so long beyond their time that it is believed they will not start for days, when they suddenly do start, and a passenger on shore who has his wife and children on board, sees the ship turning past the rock, there the boatman’s charges have arisen to such a height as to bring into competition steam-tugs, as being more economical as well as more certain.

The execution of the laws for the regulation of the fares of watermen having been relaxed or fallen into desuetude, and the charges of the watermen have so augmented beyond the legal rate as almost to extinguish the habitual use of boats on those parts of the River Thames little occupied by steam-boats or the larger craft, where conveyance by boats would be convenient or pleasurable,—if the charges were reasonable.

At Richmond the boatmen require 2s. and 2s. 6d. per hour (sometimes, however, accepting 1s. 6d. for the second hour) which, at full work of ten or twelve hours, would give a remuneration of 15s. or 18s. per diem, to labourers of a class to whom 5s. or 6s. would, for regular employment, be high wages. Double and treble the legal fares do not, however, satisfy the competitors, who charge their anxieties and discontents, as well as their losses, upon the public, for with all these extortions upon the public the condition of those engaged in such service is a wretched one. In the conflict of three men for the service of two, or of two for the service of one, anti-

social feelings of the most malignant character are engendered, and in the necessity under which such people consider themselves to be placed of compensating themselves for the waste of their time and the risks of the competition, feelings are maintained of what I have characterised as a wolfish rapacity, to prey upon the necessities of all of the public who are exposed to them.

The criminal returns afford melancholy indications of their moral condition, to those conversant with penal statistics. Thus, in the police returns, we find, under the head of "coach and cabmen," but it is stated by the police to be mostly of cabmen, a very heavy list of offenders. In the year 1854 it was 682, in the year before that 777. The recurring crimes are thus denoted :—

Apprehensions for	1853.	1854.
Offences against the Hackney Carriage Act	369	335
Simple Larcenies	29	36
Other Larcenies	10	12
Common Assaults	54	42
" " on the Police	24	11
Cruelty to Animals	57	27
Disorderly Characters	15	21
Drunk and Disorderly Characters	66	62
Drunkenness	82	73
Furious Driving	24	18

In respect to this service of cabs—the analysed charges and statistics show that by a properly-conducted competition by adequate capital for the whole field—for which, in my view, the chief police or local administrative authorities ought, as servants of the public, to be made responsible—service equal to the present might be obtained at 4*d.* per mile; or at the present legal fare of 6*d.* per mile, a service approaching in condition to that of private carriages, might be insured out of the mere waste which now occurs. Machines have been invented, which are stated to be convenient and not expensive, which, I am assured, measure time and distance, and determine for the passenger the fares to be paid, and register the earnings due to the proprietors. Under a system of competition for the field, such securities might be introduced. Isolated attempts to introduce such machinery into cabs, have hitherto even in Paris, been uniformly defeated by conspiracies of the whole body of the drivers. The machinery has been maliciously broken or spoiled by the drivers of other vehicles than those in which it was introduced. There are elements involved in the question, which may be referred to the moralist, who will agree that the waste commonly involves sin, malignity, demoralisation, as well as suffering. In this instance, the suffering is extended to the animals who minister to our convenience.

The cab horses are driven mercilessly, and then returned heated to their stand, there to remain for hours exposed to cold and wet, and indeed they often have only variations of suffering, when taken to the foul, confined stables of the small owners, which I well know are the seats of disease, and commonly the inhabitants of the mews, the first victims of the outburst of epidemics. The wretched existence of the cab horses is soon worn out. The lodgings of the men are commonly of a piece with those of their horses. It is my deep conviction, from observation, that whilst waste is sinful, sin, by the infliction of animal as well as human suffering, is wasteful. Hence economical science will be found to be a more powerful aid of beneficence than is commonly supposed. Mr. Bianconi, the great manager of horses in Ireland, received much applause from religious communities for only permitting those animals under his charge to work six days, that they might rest on the seventh day, but at our section on economic science, at the meeting of the British Association held at Dublin, he frankly disclaimed any other motive than his own interest, which was answered by a saving from the improved practice of 11 per cent. of his outlay for horses. My friend Mr. Whitworth, who has paid much attention to horses, declares that it is more economical to use up two light vehicles (as gigs), and one horse, than two horses and one vehicle. There can be no doubt that good, well ventilated, and warm stabling for the horses, and better shelter and care during the day, would be economical of capital, as good sanitary dwellings would be to the men. Besides the economical, there are æsthetical considerations connected with this branch of administration; for until the people, high as well as low, have become less apathetic to the constant spectacle in the streets of animal decrepitude and suffering, as well as of human squalor, filth, and wretchedness—until they have become impatient of them and insisted upon their prevention, and upon having in their stead spectacles of wholesome, painless, and pleasant life and action, they are not in a proper state of mind for the reception of due impressions of the beautiful, or of external decoration which the votaries of high art desire to promote. For the achievement of these improved æsthetical and economical conditions, large capital, as well as a more intelligent and superior public administration is requisite. On a competition for a large field under the guidance of such an administration, I should expect that the public thoroughfares would be cleared of the cab stands, and the spectacle of the continued waiting of men and horses during inclement weather prevented, and that this would be done by the practice as respects the voitures de remise, which prevails in Paris, where in some of the streets only the head of one horse appears from a doorway to a shelter under which it stands ready harnessed, whilst others are in proper stables

behind ready to be harnessed as fast as the demand arises. The consideration of the traffic of a populous district, and of the condition of those engaged in it, would render it desirable to encourage locomotion by steam and the use of tramways through the streets. But judging from experience in Paris and elsewhere, there appears to be no probability of much diminution of the demand for horse-power for the minor traffic of conveyance in populous districts.

There are large elementary distinctions, which I will mention here, but which I must avail myself on some other opportunity of displaying fully, between charges and payments as for *services*, and charges on and payments proportioned to the pressure of *necessities*. Payments as for service imply responsibilities to render that service in a proper manner, and those responsibilities are best brought about, as I may show more fully, by the principle of competition for the field; whilst charges made on necessities, and on estimates of the pressures and means of paying them, are sustained by monopolies, which are incident, and almost essential to the practice of what is called free competition within the field of service. In the case of the New York hackney coachman mentioned by Mr. Ashworth, the coachman, by the agreement with his fellows on the stand, had virtually an irresponsible monopoly of the service, giving him the power to exact payment according to his estimate of the travellers' necessities and means. In the case of a water supply, the actual cost of water for the supply of a water-closet, would be 6*d.* per annum if paid for as a service; but as a charge upon necessities or convenience, the companies levy 10*s.* each per annum, which forms a serious obstruction to the sanitary improvement of towns. And so with the Deal boatmen; and the character of the monopoly is similar, whether it be by the three cabs or the three omnibuses, to do what, under competition for the field, might be the service of conveyance of passengers by two;—or by two or three competing lines of railway, to perform a service which might be more responsibly rendered by one,—or by the seven originally competing establishments for the distribution of water, a service which might be best rendered by one on either side of the river, if not by one for the entire field;—or by numerous establishments of undertakers for the conveyance of the dead, a service which might best and most economically and responsibly be rendered by one;—the results in these and other branches of service which will be subsequently adverted to, are common efforts and almost common necessities to charge the waste of capital upon the public, to create virtual multifarious monopolies, and to impose, for the bad service, high charges exacted on private necessities.

One effect of the new division of fields of service by numerous small competing capitalists, is to weaken, or in proportion to the

division, to dissipate the means of that responsibility, for the consequences of want of skill or of misuse which ought always to be enforced upon them. For serious injuries committed by such persons as cab drivers, there is rarely any available pecuniary responsibility. Even as respects the small proprietors of omnibuses, when a serious injury has been occasioned to any one, the answer to a demand for compensation is usually of this sort, "I am very sorry for what has been done, but I have no means of making the reparation required. I am in debt to the corn dealer, who holds my omnibus and stock in security. I have eight children, and my wife is going on with her ninth. You may send me to prison and them to the workhouse, but I can give you no money." The attorney sees no chance of costs, and advises that there is no personal remedy. The sufferers will not, in the great majority of cases, add to their own losses by prosecuting for the public remedy, however it may be needed. But the means of responsibility augment with establishments. No such answer is available to large capitals, especially to public companies. I have long ago advocated the adoption of the superior policy of the legislation and jurisprudence of France,* which concentrates responsibility even for what are called "pure accidents," upon those who may best foresee and provide against them, namely, those who own and employ the machinery or provide the service, on which it may be most eligibly imposed as an insurance charge. The new London Omnibus Company has already paid compensations in sums of considerable and unprecedented amount, for injuries inflicted by the old omnibus servants whom they continued in their service. It is a fact illustrative of the popular error as to the means of imposing responsibility, that the company had a contract for the purchase of 200 more omnibuses, or 800 in all, which would have given them a virtual monopoly of that mode of conveyance in London, but the completion of the contract was avoided at a considerable expense, in consequence of the refusal of the English managers—former coach proprietors—to undertake the direction of a monopoly. The chief manager declared that such was the ignorance, the caprice, and the tyranny of the public, that he for one would not undertake the responsibility of a monopoly—he could not bear it!

* *Vide* the exposition of the grounds of this view, the evidence given by me before the Committee of the House of Commons appointed to inquire into the condition of labourers employed in the construction of railways and other public works, and into the means of remedying the peculiar evils of that condition, 1846, published by Charles Knight. The Committee adopted my view of the principle—of responsibility for accidents, in respect to which Lord Campbell's Act, subsequently adopted, falls short. See also an exposition of the principle in the report of my colleagues and myself, the Commissioners, for the employment of young persons in factories, cited in the "Sanitary Report," 1842, p. 443.

VII.—*On ill-regulated Competitions in Sanitary Works of House and Town Drainage and Water Supply: Competitions for the attainments of results.*

The primary measure of sanitary improvement, the relief of the houses occupied by the great mass of the poorer population from the poison pit—the cesspool and from cesspool emanations—and the machinery for carrying into those houses improved supplies of water, are largely dependant on the application of the principle of competition *for* the field, as opposed to the practice of competition *within* the field.

Most even of those medical men who have the best knowledge of the antecedents of disease, and who have attained to distinct conceptions of the larger species of antecedents which are avoidable or preventible, have yet to be made aware of the special requirements of Sanitary Engineering, by which those same larger species of antecedents must be removed. Most of the special sanitary engineers, or others, who have attained distinct conceptions of the works required, have yet fully to comprehend the administrative principles and the economical arrangements for raising the money requisite to pay for them. I have found supplies of water brought into every street of a city, and yet as far as concern the large masses of the wage class, who most need it, those supplies might have remained outside the town, for they are not carried into their houses. In some districts water was carried into the houses, but with little sanitary gain, for there being no corresponding arrangements to carry away the waste water, the subsoil was made a swamp, and the evils of the cesspool aggravated. In other districts sewers were provided uselessly as regarded the poorer houses, there being no house drains to communicate with the sewers. It has yet to be perceived, by railway and general engineers, that an arterial system, either of water supply or of town drainage, is useless without capillaries, and that to act properly, or to act at all, the arteries must be adjusted systematically in subordination to the capillaries, and that these capillaries commence within the houses. It is, however, shouted out that house owners ought to be “compelled” to provide the capillaries. But what does this sort of compulsion mean? Commonly that each house owner should be compelled to provide the requisite works by the method of competition within the field of supply, house by house; that is to say, that all the bricklayers or plumbers of a town should, within that field, compete for the works for each house,—the result of which was, that the middle class house owner would be put to the expense of a twenty pound water-closet (and house drains to correspond in excessive expense) to be rid of a cesspool:—that the owner of the description class

of house occupied by the wage class, would be put to the expense of a ten or twelve pounds apparatus, and to heavy immediate outlays which would absorb two or three years of rent without any prospect of return. As so put, in the common modes of local legislation for the largest towns, as well as in the previous general legislation, sanitary improvements are everywhere resisted to the utmost by the owners of the most numerous classes of houses. As so put, the competition within the field of the common bricklayers and plumbers, instead of being a competition of knowledge, efficiency, and economy—is in reality a competition of every variety of ignorance, and blundering, and inefficiency, as well as of expense;—with water taps which ran to waste and defeat the economy derivable from the system of constant supply;—expensive apparatus with house drains, which detain what ought to be removed. The measures for overcoming these obstacles which stand in the way of the most important public improvement, were first to simplify, improve, and cheapen the works,—which those who are acquainted with any labourers will admit has been so far accomplished, that three houses and towns may now be drained and improved well, at the cost heretofore incurred for doing one ill; and next, to ensure the efficiency, as well as the economy of the new work, by means of the principle of competition for the field, by putting up as a field all the houses of one whole street;—or better, of one district; or better still, of a whole town,—to competition for the execution of the house works required. Where it is the good fortune of the wage class * of a town that their houses have belonged to one landlord, and that landlord an intelligent and beneficent one, as is the case with Alnwick under the Duke of Northumberland, the application of the principle has been easy, and its success complete. In other places, rare zeal and energy have withstood sinister interests against the principle, and against the public, and made the interests of the latter prevail, chiefly, however, by the aid of an improved administrative principle, embodied in private improvement rates, for the distribution of the charges of works over periods of time.†

* I adopt the term “wage class” from my friend and colleague on the Metropolitan Sanitary Commission, Professor Owen, and I do so because I consider it more free from misleading ambiguity and misrepresentation, than the common terms “labouring classes,—industrial classes,” &c.;—as if he who drives a pen ten or twelve hours a day did not labour, and labour manually, as well as he who drives a shuttle during as many hours;—as if those who labour mentally, and traders, and professional persons were idlers! The terms “mental labourers” and “manual labourers,” would make somewhat more correct distinctions, but the most advanced labourers of those whose labour is chiefly manual, such as skilled artisans, have also to exercise their mental faculties; and it would be unjust to them to designate their labour as exclusively manual. The term “wage class,” I think, makes a more clear and eligible distinction.

† *Vide* the exposition of the mode of applying this principle in the “Sanitary Report,” 1842, p. 319, 453.

By these improvements, the cost of the machinery for carrying water into the houses of the wage class is reduced below the cost of constructing and maintaining in repair a common pump, and costs of the machinery for the constant discharge of all waste water and excreta from beneath the sites of houses, the water-closet, sinks, and self-cleansing house drains, are reduced from one-half to two-thirds below the cost of constructing and maintaining in repair and cleansing the common cesspool. Such improved combined works of water supply and cleansing the houses as have, even when imperfectly executed, almost banished typhus from such towns as Croydon and Ely, and have reduced the death rate more than one-third, might now be executed and maintained at a charge of a penny per week per head of the population. Even now, however, and in the face of wide and varied demonstrations, we have eminent special engineers, who cling to the cesspool and to large man-sized sewers of deposit, as against small and economical self-cleansing tubular channels;*—and but that the new venous and arterial system for the sanitary improvement of towns, is proved by their resistance to be so far beyond the common engineering and structural art and practice, and the common brick and mortar conceptions, as would be the construction of any sort of watch by a common blacksmith;—it would be the most economical course to comprise in one field of competition, the combined works of water supply and drainage, the arteries and the capillaries, the mains as well as the branches, and put up that entire field to competition, to maintain as well as to execute the works in good working condition for a term of years, which would create an interest in good work at the outset. Beyond this, however, where the objects to be attained admit of clear definition, as the chief sanitary objects now do, it would, according to my experience, be a method of applying the principle of competition for the field, peculiarly eligible for public administrative bodies, instead of prescribing the means, to prescribe the attainment of the ends;—instead of troubling themselves with any particular means or plan on which they as men necessarily ignorant, and therefore peculiarly liable to imposture and to unwitting honest but expensive error and disastrous failure,—to put up the encumbered field to competition, for the most efficient as well as the cheapest mode of obtaining the relief required. For example, to take the case of the British Metropolis. The great mass of the excreta of its two millions and a half of population, is, in the average, only removed from beneath its site yearly. In about 60 per cent. of the houses, chiefly those occupied by the lower, middle, and the wage class, it is detained in cesspools, which at the

* *Vide* communications from the General Board of Health, and reports from the superintending inspectors of the Boards, in respect to the operation of pipe sewers, laid before Parliament, 1855.

best are only emptied yearly; whilst there is in house drains of deposit, in sewers of deposit, an extent of noxious evaporating surface, in which the whole population might lie down, the emanations from which we have clearly ascertained are the cause of one-third of the death-rate of 50,000 lives annually. This great field of service might be put up to competition to contractors or companies of competing contractors on this question. "At what rate will you undertake to abolish the cesspools of all sorts—in sewers and drains of deposit, as well as in pits,—and ensure the constant removal of all excreta before it can enter into noxious stages of decomposition, and execute, and maintain in efficient action; for the whole of the Metropolis works like those which at Ely and Croydon and other districts have already reduced the death-rates by one-third?" The answer of efficient competitors, for the whole field, founded upon the experience of smaller and really more expensive fields, might probably be,—assuming water to be already laid on to the house:—"We will do it for twopence per week per house, one with another, and at that rate we will undertake to prevent any stagnation of excretory matter, beneath the site of the Metropolis;—for we will cause the whole to be removed inoffensively, at the rate of two or three miles an hour, in suspension in water;—nothing shall remain within even the limits of the suburb for a longer time than half a day, whilst the noxious stages of decomposition commence ordinarily in about four days. We will, in fact, guarantee those results for the whole of the field, at less than one-half the contract price of cleansing and mitigating the poison pit—the cesspool,—which is 1*l.* per house per annum, or 4½*d.* per week." And I will add, that if the whole field of the Metropolis were clear of water companies and were put up for competition upon this question, "At what rate per house will you undertake to provide a supply of pure soft fresh and well aërated spring water for each house?"* The answer, on ascertained data, might be—"We will do it, at a less than the average cost of keeping in repair the butts and tanks kept up under the intermittent system of storage of water for houses which we will supersede; we will do it and keep the distributary apparatus in good working order for little more than 2*d.* per week, one house with another; and for that sum we will maintain a constant supply at high pressure, night as well as day, and afford the means of reducing,—certainly more than one-half, the destruction of life and property by fire."

These are no rash or unauthorized guesses, but are founded on the assumption, that what has been done in small fields may be as

* *Vide* the "Report of the General Board of Health, in the Supply of Water to the Metropolis," 1850, p. 281.

well or much better done in large ones. For example, Mr. Rawlinson, the pre-eminent sanitary engineer,* at the meeting of the Association for the advancement of Social Science, showed that the objects stated in respect to the interior of houses, had been accomplished for the poorer class of houses at an outlay of 1*l.* 10*s.* each; and for middle class, self houses, at about 6*l.* each. At such rates private works have been elsewhere provided on competitions for the field of hundreds of houses, as against the common practice of a number of bricklayers or plumbers competing for a single house. Self-cleansing sewers had been provided for nine towns, outfalls and all, at an average expense of 3*l.* 18*s.* 4*d.* per house, implying an annual charge, for the repayment of principal and interest in thirty years, of 4*s.* 6½*d.* per house, so that, if there were not an available self-cleansing sewer in the Metropolis, the whole of the three hundred and forty thousand houses which, with its suburbs, it comprises, might be served with self-cleansing sewers, outfalls included, for 1,336,000*l.* The public works of water supply had, with some exceptional rates been provided for those same nine towns, at 2*l.* and a fraction per house per week. If the attainment of the object of the interception of the sewerage, and its discharge at a given point, as at Barking Creek, were put up for competition, I have the warranty of estimates made by Mr. Austin and Mr. John Roe, pre-eminent engineers, for the assertion, that a Mr. Brassey would see his interest in undertaking the attainment of the object at about one-third the expense authorized by the present Government at the instance of their Chief Minister of Works, Lord John Manners, to be levied upon the Metropolis, for about one million instead of three. Mr. Austin estimated the cost of intercepting sewers over much the same lines, only on a smaller scale, but terminating at Barking Creek, at 710,000*l.*, and Mr. Roe did not materially differ from him in his lines and the scales of sizes, only he extended the works at the termini, which somewhat increased the expense; but under the present auspices, the three millions will, before the works are completed, become five. A competition for the attainment of the object, would check reckless deviations by irresponsible local bodies—such, for example, as one displayed in connection with metropolitan works. Twenty-one miles of self-cleansing sewers were designed for the sewerage of the whole of Westminster proper at a rate and a scale similar to that accomplished in nine towns by Mr. Rawlinson, for one thousand pounds per mile; but the authorities to whom the work was confided, chose to adopt a man-sized scale instead, for about one mile of sewer in that same district, at an estimated expense of between 14,000*l.* and 15,000*l.*; but which

* I distinguish those as pre-eminent engineers whose works have been executed within their estimates.

being in ground known to be dangerous for that description of sewer, has already cost 70,000*l.*, and is an extended cesspool, and will cost probably 100,000*l.* before it is completed,—or double the amount for which the whole of the houses, as well as the streets in that wretchedly ill-governed city, might have been put in a superior sanitary condition.

Actual working examples on a small scale, show that under a competition for the field, fertilising matter, which Professor Hoffman values at one million per annum for the Metropolis, and which matter it is proposed to throw into the sea, might be utilised on an area of land 10 miles square, comprising 60,000 acres, but all of which will now be wasted in consequence of the sheer incapacity of the administrative body, to judge of conflicting testimony, or to master the subject. Under the past and present system of administration, the charges of the London ratepayer, in money as well as in excessive sickness and mortality, are certainly grievously heavy.

On a house to house inquiry, made at my instance, in three average London parishes, it was reported that 60 per cent. of the houses had cesspools; that the average annual charge of cleansing these cesspools was 1*l.* 0*s.* 4*d.* per annum, or 4½*d.* per week, apart from the original cost of making these poison pits; that the original cost of making the old brick house-drains of deposit involved an annual charge of 2*l.* 0*s.* 2*d.* per annum, or 9¼*d.* per week; that the cost of cleansing and mending these drains was 19*s.* 8½*d.* per annum, or 4½*d.* per week; that the cost of repairing the water-butts and cisterns necessary on the intermittent system of supply was 19*s.* 2*d.* per annum, or 4½*d.* per week; that the cost of the intermittent supply of sewer and land manure-tainted water itself averaged 2*l.* 1*s.* 9*d.* per annum or 9¾*d.* per week for works such as the drain of deposit and the cesspool, which had a most noxious influence upon his health, beside the sewer of deposit, which for cleansing and repair incurred a charge of not less than 1*l.* per annum more, making the average aggregate taxation of the house owner, for this class of works, about 3*s.* per week, or 8*l.* per annum; that is to say, that the cost of the ignorance and disregard of economic principle, and of corresponding correct legislation, is for noxious works, three and four times greater than that at which good works are obtainable. For works which may be proved to be of the like objectionable character to those already executed, there is an impending new burthen of ten millions of estimated outlay when they are completed. Beyond existing money taxes, however, there are the taxes for excessive sickness, excessive death-rates and funerals, and premature disablement and lost labour, all of which is under estimated for the Metropolis at between one and two millions per

annum. The life-tax upon the ratepayers, the middle classes and shopkeepers, averages from one-fourth to one-third of the duration of life, and of the insurable period of working ability. (*Vide* "Supplement, 1843, to Sanitary Report on Interments and Death-rates of Different Classes of Society in the Metropolis," Appendix No. II., also the Society's *Journal* for January, 1843.) The increasing experience of less insalubrious suburban residence is occasioning much house property to be deserted and lowered in value by the removal to the suburbs of persons who have means, thus injuring trade as well as the social position of neighbourhoods, leaving those who have increased taxation of the character I have described with reduced means to bear it.

I am assured that at Ely, persons who were wont, for their health, to seek relief at Yarmouth, have discovered that sanitary works have given their own homes the superiority. In the portion of Hamburgh rebuilt after the great fire—and rebuilt professedly by Mr. William Lindley upon the principles, as to the works of drainage and water supply, laid down in my sanitary report—retired tradesmen who had gone to live in suburban residences now find the improved urban dwellings the most eligible for salubrity as well as comfort, and are returning to them. Other evidence might be adduced to prove the practicability of giving the town the advantage over the country as it now is.

The ends attainable by good sanitary works have been advanced beyond the points I have described. An able mechanician in Paris contracts, on a large scale and successfully, for the attainment of *results* in warming and ventilation, and contracts to warm cheaper in Paris, where coal is 46s. per ton, than it is done for manufacturers in Manchester, where coal is, I believe, less than 9s. per ton. He contracts to warm and ventilate the Madeline, which has 60,000 cubic metres of space, night as well as day, for 14 francs per diem. This Contractor—Mons. Leon Davaoir—contracts to keep the Hospital La Riboisière warmed up to 62°, night as well as day, and to change the air every hour. Each bed has 56 metres of space, and the contract price of performing this service is at the rate of two sous per diem per bed; and he does more than his contract—he changes the air every three quarters of an hour, and furnishes eight gallons of warm water per diem per bed in the bargain.* The contracting

* For a plan of this method of warming and ventilation, see the "Compte Rendu of the Congress on Hygiene," held at Brussels, 1852, Appendix IX., plate xv., description p. 154; also, "Etudes sur la Chauffage, la Réfrigération et la Ventilation des Edifices Publiques," par J. Ch. Boudin, Paris, J. B. Baillière, 1853; also by the same author, "De la Circulation de l'eau considérée comme moyen de Chauffage et Ventilation," Baillière, 1852. In contracting for the attainment of results, it was necessary that the contracting mechanist or engineer should have exclusive control over the means, the machinery

administrators concern themselves only with these results, leaving the contractor to his own devices as to the means and their management by his own servants. By this change hospital gangrene is banished and the recovery of patients is expedited. I am happy to state that the sanitary works of house and town drainage and of water supply have been so far advanced in despite of ignorant, sinister, and malignant oppositions, as to afford data for contracting as "a matter of business" for the attainment of ends beyond those of definite works to the attainment of the definite results of works. Thus such a contractor might safely contract, for the attainment of some chief sanitary ends, such as the banishment of hospital gangrene. In like manner, experience under varied circumstances has already been derived, to afford data, for a competitor for the whole field of the service of a town to contract to reduce its death-rate below a given average. Thus, from the banishment of typhus from old common lodging houses, the reduction of the average of a death-rate amongst the inmates of model dwellings, from one-third above to one-third below the general average of London, actuaries would verify the data as safe as a matter of business for competitors for the field to undertake the contract with appropriate powers, for the reduction of the death-rate in the Metropolis from 23 in 1,000 to 17 in 1,000. For this, the million of annual expenses from excessive sickness and death-rates would form an ample fund. An easier competition for the field of service would be the attainment of results or the reduction of the death-rates of the guards kept in barracks to one-half the present average as also the prevalent sickness-rate of 40 in 1,000 constantly in the hospital, and a death-rate of 20 in 1,000.*

which it was found could not be worked by indifferent, unskilled, and irresponsible persons, and that it was therefore necessary to have it kept in action under the superintendence of his own servants. This was found applicable to private as well as public establishments. The attainment of definite sanitary and other results, such as of acoustics in public edifices, should be specified and required in architectural competitions. Until these results are in the bond, they will be little attended to.

* The principle of a contract for the attainment of results has, in effect, been applied in public administration, and has been found to work admirably. (For an account of its working, *vide* the report of my colleagues and myself on "Quarantines," 1849, p. 115 *et seq.*) Formerly in the commencement of the system of transportation, it appeared to be a natural state of things that there should be an immense loss of life during the passage. At first, instances occurred of one-half those embarked dying and being thrown overboard during the passage; then one-third; then it was thought a great improvement was effected when only 10 per cent. were lost, and so it went on until a simple alteration was made in the contract, from the payment per head on the number *embarked*, to a payment per head on the number *landed alive*. This opened the eyes of shippers to the advantages of sanitary science, and they of their own accord, engaged medical men as ship surgeons, and gave them means and an interest in its rudimentary applications. The early result was a reduction of the mortality on shipboard to little more than 2 per cent., and lastly to $1\frac{1}{2}$ per cent. on extremely bad lives. Now the death of

For the application of the principle of competition for the field, to recognised subject matters of administration such as I have described, I presuppose, qualifications of high administrative intelligence and integrity and public zeal, to plot out the most advantageous fields for competition, to conduct with judicial impartiality the competitions for their occupation, and to enforce the rigid performance of the contracts in behalf of the public. I presuppose also the ability to analyse closely the cost of service, so as to guard against concealed emoluments, which are sources of corruption, and firmness to withstand the imputations of vulgar competitors, and to make those direct liberal allowances of due market rates of profits which are preservatives against the use of surreptitious means to obtain them. Our postal department, under its present auspices, as being to a great extent a contracting department, may be cited, as possessing such conditions, for preventing the acknowledged evils of unrestricted monopolies, and of maintaining that responsibility towards the public for efficient service, which is thought to be only obtainable by unregulated competition within the field. The political economists to whom I have submitted cases such as I have described, have expressed concurrent opinions upon them, that the earlier politico-economical doctrines as to competition must now receive considerable modifications. The waste and possible saving of capital, indeed, admit of as little dispute as do cases of the waste of mechanical power, or the direction of the means of economy. To the questions sometimes put me, where I would stop in the application of my principle, I am at present only prepared to answer, "where waste stops;" which must be a matter of inquiry in each case involving the question where the application of the principle needs authoritative intervention, or where it must be left to voluntary means guided by an advanced

each soldier means a loss to the public of upwards of 100%, and the country at least twice as much for the value of another labourer to take his place, and a reduction of the death-rate to 10 in 1,000 (6 in 1,000 being obtained with good lives on shipboard) would be a saving of at least 1,000% per annum on the guards, and a reduction of the sickness rate would be equivalent to a gain of the money value of an augmentation of price to the number kept out of the hospital. The 1,000% capitalised at 5 per cent., would be 20,000%. But by a competent sanitary engineer, the structural improvements requisite for the reduction of both the sickness and death-rates, might be effected generally for a third or a quarter of the capitalised amount; and sanitary arrangements might be kept in action at a considerable profit on the sickness-rate. The contract for results would of course oblige the contractor to make good the loss from every death beyond the stipulated death-rate. By such a contract the work of benevolence and patriotism would be done without either, and far more effectually, and in a manner that would gladden the heart of Miss Nightingale. By it at least one sincere mourner would be ensured for every soldier who died, and an active sympathiser in case of sickness, determined to know the reason why, and to prevent its recurrence wheresoever prevention was practicable.

intelligence. The economical question I have raised, will be found to be in reality not one for the restriction, but one for the enlargement of the freedom of competition; the present practice of competition within the field, being like what might be called "the freedom of racing," with small and poor horses, necessarily as it were doubly weighted with establishment charges, whilst the principle of competition for the field may be said to be one of the most free competitions possible, by horses of the greatest power, with the lightest proportion of weight for the attainment of the object of competition,—the maximum of speed, or the best service at the lowest charge. For the better understanding of the requisite modifications of economic doctrine in these respects, as well as for a better appreciation of the large moral and social bearings of the question, it appears to me to be requisite that I should describe the condition of two other fields of service, the one for the supply of bread, the other for the supply of beer.

VIII.—*On the conditions of Competition in respect to the Manufacture and Distribution of Bread in London and Paris;—Co-operation for the Distribution of Flour.*

I recognise as a fact of common experience, that where a single tradesman is permitted to have the entire and unconditional possession of a field of service, as in remote rural districts, he generally becomes indolent, slow, unaccommodating, and too often insolent, reckless of public inconvenience, and unprogressive. To check these evils, competition of a second is no doubt requisite; and where the two combine, the intrusion of a third. But experience should be consulted, and the public intelligence must be exercised against hounding on a competition, which consideration would show involves palpable waste,—as where two or three capitals may suffice for the performance of a service moderately well, the intrusion of a fourth, fifth, or sixth competing capital eventually leads to its being performed immoderately ill.

In the service of the Baker, for example, in London, the profit in the production, and distribution of bread is, under ordinary circumstances, about twelve shillings per sack of flour, making 94 four-pound loaves, being nearly one penny three farthings per loaf. A field of supply or sale of twelve or fourteen sacks a week, according to local circumstances, may be assumed to be a "living profit" for a respectable baker in a moderate way of business in London, to pay the rent and taxes of a 60*l.* or 80*l.* house and shop, with its bakehouse. With the same bakehouse and shop, and nearly the same fixed establishment charges, he might produce and distribute double the quantity; but from this he is generally precluded by a competitor. Upon fields of supply so occupied with double

capitals other competitors break in, until the share of the field is reduced, often to the distribution of six sacks a week, and sometimes to four sacks each, or to an occupation by four capitals of a field in which competition would be better maintained by two. The sanitary condition of the small bakers and competitors in towns, whether masters or journeymen, is most wretched. The bakehouses are confined, miserable and unwholesome. The little master to pay his rent, lets off the upper portions of the house, and crowds himself and family in the lower apartments. The small capitalist who enters into this sort of competition is frequently a man of small understanding, and of the smallest skill in working of his material, except when, under the pressure of his necessities, his ingenuity is excited in adulterating it. He is obliged to obtain his flour on credit, and is supplied with that of the worst quality.

Under the ordinary circumstances of the competitor, within the reduced fields, he is almost compelled to extort from the public his excessive establishment charges by cheating, by adulterations, by short weights, by bribing servants, and by overcharges as to the quantities. Fines may be inflicted, but the necessities being pressing and continued, the frauds and evasions are continued. The only chance of relief for the public will, I apprehend, be found to be in removal of the producer's necessities and temptations by creating widened fields of supply and corresponding production on a larger scale.

It must be admitted, however, that experience of the contracts for the supply of poor law unions and for large public establishments in England, show that the enlargement of the field of service does not alone suffice as a complete security at the least, under the existing conditions. So difficult was it found to obtain good biscuit for the Navy, that it became absolutely necessary to establish governmental bakeries, a measure which was attended with entire success, both in the purity and economy of the product; and the experience of the Army contracts for provisions, shows that resort must be had to original production as a security. At Birmingham the quality of the bread supplied under the highest competition of numerous small capitals had become so bad that a private company was set up, on small shares, for baking bread, and having the good fortune, for a joint stock company, of getting a good practical management, pure bread was made and sold at a penny a loaf cheaper than by the numerous small bakers; and the company gaining a wide field of supply, a good profit was divided amongst the shareholders. In time, the principle of unity of management on a large scale prevailed, the shares of the company were bought up by one manufacturer, who had another large manufacturer as a competitor within the field. The result of this modified competition for the larger field was, that

Birmingham was supplied much cheaper and better with bread than any of the adjacent towns.

From the difficulty of obtaining unadulterated bread in London and elsewhere, private families are driven, much to their inconvenience, to bake for themselves; but their object is extensively defeated by the difficulty of obtaining unadulterated flour. At the meeting at Birmingham of the Association for the Advancement of Social Science, a paper containing highly important, economical and social facts, was read by Mr. John Holmes, of Leeds, on "The Moral and Economic advantages of co-operation in the Provision of Food." To meet the difficulty of obtaining unadulterated flour, co-operative associations, which were in reality joint stock companies, were formed, in 1*l.* shares, first and most successfully at Rochdale, in 1844, and then at Leeds, in 1847, by the more intelligent persons of the wage class. At Rochdale the capital of one association amounts to 14,000*l.*, inclusive of a mill, and the business done by them, with a good profit, amounts to 90,000*l.* per annum. Their profit is gained chiefly by the saving of establishment charges of numerous small capitalists, of whom it is calculated that eighty have been superseded by the one society, having less than half the number of places of subdistribution conducted by salaried servants, and by performing the service of distribution at little more than one and a quarter per cent. at the central or wholesale establishment, and two and a-half per cent. at the retail branches;—whilst private trades do not effect the chief distribution at less than 5 per cent., and the subdistribution at less than 15 or 20 per cent. or even more. They have, from their complete success, been led to extend the operations of joint stock stores, to meat and groceries with the like success. In speaking of the results of the Leeds Flour Mill Society, Mr. Holmes says, "if 20,000 people will agree at once to give their orders for flour, and will find the requisite capital, then all expense of catering for a business is saved and all risk avoided. Capital can be adapted to requirement, and the machinery can be exactly fitted to supply. No power need be wasted, and no disadvantage accrue from the want of means. No traveller need be paid to seek orders, no cost of law in recovering bad debts, and above all, no loss from debts being incurred." "In one district near the Leeds mill it has been shewn that the shops for provisions have no relation to the number of the consumers, and it has followed that of twenty persons beginning in these shops, fifteen have lost their all and more, for five who have succeeded to live. All failure is loss to the public as well as to the private trader." *

* A proportion of these operative joint stock companies appear to have failed, from causes such as occasion the frequent failure of the middle class joint stock

But the Birmingham example of the manufacture and distribution of bread on a large scale and other instances which may be cited appear to be in advance of those of extended distributions of flour, because in the large scale, the saving out of the waste incidental to the home baking, is sufficient to allow the bread to be made and distributed to them for nothing beyond the prime cost of the materials. M. de Fawtier shews that in France the public bread making is really eleven per cent. cheaper than the domestic bread making, allowing 4 per cent. as the value of the domestic labour, but not allowing for the domestic mischances of burned bread, ill-fermented, sodden, and spoiled bread; yet in France, the art of domestic bread making is commonly in advance of England. In France, too, there have been late improvements in the construction of the larger ovens, which further reduce the cost of fuel one-third. In the common practice of baking, in the kneading of the dough in England, the journeymen are stripped to the waist, and in consequence of the severity of the labour, and the excessive heat of the bakery, profuse perspiration is induced, and this is unavoidably mixed up with the material. Moreover the journeyman baker is afflicted with a skin disease peculiar to his occupation. In the government bakeries 450 pounds of dough is mixed up in four minutes, and kneaded in six minutes by machinery, and the improved machine labour performs at 5*d.* per cwt., including wages, with wear and tear of utensils, what previously cost 1*s.* 5*d.* I am assured that at Carlisle, where some bakeries on a large scale have been long carried on, and the work is enabled by the scale to be performed by machinery, the workmen are better paid than in the common bakeries, and are put in a good sanitary condition, and the product is superior in quality, as well as cheaper.

In France the principle of competition for the field, and a considerably improved production is effected by the authoritative extension of the field of competition and supply. In Paris the total number of Bakers in proportion to the population is restricted to nearly one-third that of London; the establishments are consequently on a larger scale; the art of baking is in advance, and the rate of production of better bread is on the average one penny a loaf cheaper than in London, which it may well be with reduced establishment charges and really more powerful competition. Dr. Ure states—it is proved, indeed, that in Paris the baker's charge on the four-pound loaf is a halfpenny, whilst in London it is about a penny three farthings. M. de Payen, a Member of the Institute, has examined the practice of bread making in England, as compared with that in France, and reports, that the proceeding on the same basis companies—such as insufficient capital, defective accounts, insufficient audit, and want of business skill.

as to the price of flour, the price of bread, which is pure in Paris, is as 6 against 7 in London, for bread which, on analysis, he found to be generally adulterated. Mr. F. O. Ward has examined the system of bread making in France, as compared with that in England, and concurs with M. Payen as to the public advantage of the principle of regulated competition for the field. The bakers with whom I have spoken in England on the economy of their trade are unanimous in their declaration that the public might be better and cheaper supplied by one-half their present number.

Mr. F. O. Ward informs me that, in Paris, the bakers of the *banlieue*, or suburbs, who have never been under the regulation as to number by which the bakers of Paris within the walls are governed, have multiplied to about three times the number (relatively to the population they supply) of their Parisian brethren:—the increase bringing them up, curiously enough, to about the same excessive proportion as prevails in London; thus showing how in economical statistics the same laws in operation bring about everywhere the same results. The suburban bakers of Paris, Mr. Ward states, petitioned some years ago, as well in their own interest as in that of the public, to have their numbers reduced and placed under permanent restriction. In this singular document these bakers show the disadvantage under which they labour in consequence of this freedom to multiply at random. They set forth for a period of years the annual excess of bankruptcies among the bakers of the *banlieue*, above the average occurring among their Parisian brethren; and on other tables contrasted columns show how much more frequently shops change hands in the suburbs than in the city from the ruin of their proprietors. They further establish that the average quality of the suburban bread, made under free competition, is inferior to that of the bread made under regulated competition in Paris—the struggling bakers of the *banlieue* being driven to eke out their scanty profit by using inferior flour, and too often by having recourse to adulteration. They show how the poverty of a majority of the suburban bakers place them at the mercy of the great millers, who first get the poorer bakers a little into their debt, and then oblige them to accept inferior flour at a price beyond its value; an extortion of which the baker is only the first victim, and by which the consumers of the deteriorated bread, *i. e.*, the suburban population, are the ultimate sufferers. They offer to find among themselves the money required to buy up and close the redundant establishments, and they declare themselves ready to submit to the restriction of price imposed on their Parisian brethren, provided they can be secured against the intolerable evils of excessive multiplication, so injurious to the consumer as well as to the producer. It is rare, as Mr. Ward observes, to see two economical systems at work in

such close proximity, and with such sharply contrasted results ; and it is probably rarer still to find the victims of unregulated economical freedom conscious of its pernicious influence on their own usefulness and happiness, and petitioning for regulated freedom as the only true remedy for their misfortunes. Bread in Brussels with unregulated competition was dearer and worse in quality than in Paris. In the poorer quarters of Brussels the small shops for retailing bread literally swarmed. To meet the evil a manufactory of bread on a large scale was established, which produced better bread at a lower price than the petty bakers could turn out, and it is stated to be prospering well. In France there are fiscal and other regulations requiring the bakers to keep reserves of flour, &c., to which economical objections may attach, but they are quite beside the principle propounded in the regulation of competition. Experience everywhere shews, that whilst the extension of the field of production, reduces the temptations and the means to falsification, and inferior production, the unlimited reduction of the field augments and almost necessitates them, so much so, that it has become a popular aphorism applicable to the particular branch of industry, that "an empty sack can never stand upright," whilst a full one may. By breaking the service in question into fragments, the large moral and legislative error is committed of putting sinister interest against duty, under conditions, which it will be shewn, also, in respect to another branch of service, make such interests too strong for private morals, for the law, and public administration. To give a conception of the extent of the bearing of the economical question, I may state that some years ago I had occasion to make what I term an economic analysis of a four-pound loaf—that is to say, how much of the cost of production, of transport, of distribution, there was in it, when I found, that at the prices, and the rents of the time,—averaging in England 25*s.* per acre,—the rent in the four-pound loaf was about three farthings, whilst the cost of distribution was more than three-halfpence. On the like economical analysis of the cost of a pound of meat to the consumer the charge to him for distribution appeared to bear the like proportion, *i.e.*, double the rent in the price of the commodity to the consumer. It appeared, generally, that the cost of distributing the produce of the soil was double the rental of the soil. It appeared that, by the extension of the field of the service, and the saving of the charges of unnecessary establishments and labour, the service of distribution might be greatly improved, and the expense reduced to less than one-half ; or, in other words, the result was indicated of a possible aggregate saving to the community equal to the whole rental of the land—equal to the whole of the general taxation of the country.

IX.—*On the Moral and Social Evils from Competition within the Field exemplified in the Distribution of Beer.*

In no branch of production and trade will the effects of false principles of economy be found, on competent examination, to be more strikingly manifest than in the production and distribution of Beer. In respect to its production, it will be found that, on the scale of the great public breweries, by superior art and scientific appliances,—in getting out a greater quantity of extractive matter, in the avoidance of waste,—a saving is achieved which may be estimated as high as 16 per cent. on the raw material as against the home brewer. By the powerful competition of large capitals only a part of the saving so derived is obtained as profit by the manufacturing capitalist. The householder who buys his beer direct from the large brewers, at the large brewers' wholesale prices, may be said to get his brewing done for him for less than nothing—for less than the saving from the previous waste in his home brewing. But in the present grossly neglected condition, of the great bulk of the wage class,—neglected as to education and training, they are unfit to be entrusted with the commodity in bulk. Nor is this unfitness confined to beer. There is with ill-trained classes so much waste, even of bread and groceries when they get them in bulk, as to make the charge of retailing them a charge for a service of economy. It would often be destructive to give to such classes a week's rations at once. The respectable publican, who performs the service of distribution over a fair field, and doles the beer out, pint by pint, amongst a population of such habits, as against their free access to the barrel of beer in the house, prevents large pernicious waste, and renders the service of an economist; and when he does not allow scores to be run up, but requires immediate payment, he administers a moral check which is entitled to consideration. The respectable licensed *victualler*, the hosteler, the innkeeper, with his "tap" for the wage class, may not be interested in any innovation upon the old-accustomed habits of the population, or in rigid temperance movements, according to our notions;—but with a fair trade he is in no need to labour to stimulate consumption, and he has a decided interest against intemperance,—for the drunkard annoys the bulk of his regular customers, disturbs his business, by quarrels, brings in the police, keeps the house open until late, abridges the family's rest, and is really a nuisance. The most desirable and practicable advance for the promotion of temperance would appear to be the consolidation of the business of the coffee-shop keeper with that of the publican, to make him more of the ancient hosteller and victualler, that he may withdraw custom from the modern gin-shop keeper. With the more full sale for beverages, there is the less temptation for their adulteration. When, however,

the field of service, which may be occupied in fair competition by two establishments, is by an increased competition occupied by three, four, five, or six competitors within the field, then the conditions are wholly and injuriously altered. As in the competitions within the field for the supply of bread, the ordinary profits will not suffice to bear the disproportionate establishment charges on limited areas or restricted custom, and those charges are extorted from the customer by frauds,—less by short measures than by reducing the quality of the beverage, and giving fictitious strength and intoxicating power, by adulterations.* (*Vide* Report of the Commons Committee on Public-houses.) The lower class of competitors frequently compete in depraved stimuli to consumption, to riot and intoxication. “I recollect the time,” says a respectable witness, Mr. Stinton, the Chairman of the United Towns Licensed Victuallers’ Association, “when the licensed victualler was master of his house. I know “when he used to say to a working man, ‘Now, you have had “‘enough, you go to work;’ but he dare not say so now. There “are, perhaps, two beer-houses, one on each side of him, and if he “said that, the man would say, ‘What does it matter to you, “‘if you are paid? if you do not serve me or trust me I can “‘go next door.’ The licensed victualler is bound to do this, and “sacrifice the working man’s family, from no other cause than the “beer trade; it has brought gin palaces into existence again.” “I “recollect a case in which I said ‘I will not allow cards in my tap- “‘room,’ and the consequence was that the men said, ‘Well, there “‘is a beer-house very near, and if you do not allow it, we will go to “‘that house.’ Bad language was being used, and my house was “cleared. I lost all my custom for a time, and I was obliged to “allow cards to regain it, in spite of the law.” The statements which were brought before me as a Commissioner of Inquiry, as to the frequent depravity of this competition would appear almost incredible. “It’s odd,” said one of these competitors, a beer-shop keeper in an agricultural district, “if I don’t beat, for I “provide my customers with a girl and a fiddle.” But this fellow was shamed by another competitor, who had girls dancing naked

* A witness, Mr. Ridley, who has offices for the analyzation of alcoholic liquors, states to the Committee on Public-houses (who report the existence of an almost universal practice of imposition on the public), that the net price of the brewer’s beer is 31s. 6d. the 36 gallons, which quantity is increased to 48 gallons by the addition of water and sugar and then sold at 3d. per pot, which yields a profit, whilst in the genuine state, the profit would be about 4s. To bring a head up, a little vitriol, coculus indicus, and a variety of drugs are added. The brewer’s beer was, according to another witness, invariably of the standard of 10½ gallons of proof spirit to every 100 gallons of beer, whilst the samples from the retailers dealing at the same breweries did not exceed 6⅞ gallons; and there was not one of them within 20 per cent. of the brewery standard. The fraud upon the revenue was estimated at one-fourth of the malt tax.

for his customers.* The customers of the licensed victualler's tap, or of the inn, were under the possible check of "master," or of "master's friends," the parlour customers; but in the common level of the beer-shop, in the bye-lanes, or hedgerows, where the poorer competitors get cheap tenements, every restraint is thrown off, and vice revels, with no effectual check, against the full operation of the maleficent interests which a false political economy and empirical legislation allows to be created. I apprehend that the respectable publicans would themselves concur in conclusions similar to those adopted by the competing bakers of the suburbs of Paris.

Ignorant legislation, upon false principles of economy, has in this great branch of service as in others, grievously aggravated all the evils sought to be remedied. Intending to improve the quality of the chief beverage of the wage classes, it has made it worse for them. Intending to increase their domestic comforts, it has diminished them, and occasioned destitution and pauperism. An army of active workers for their improvement, consisting of benevolent country gentlemen, magistrates, parochial clergymen, educationists, and social reformers, were making strong head against the peculiar vice and failing of the ill-trained Anglo-Saxon population—an unregulated and excessive appetite for intoxicating beverage which makes high and fluctuating wages almost synonymous with ruinous excess,—and were getting them into habits of temperance, thrift, and domestic comfort, when their labours were frustrated by that most unhappy measure, the Beer Act, which is justly pronounced by the Committee of the House of Lords (of 1850) to be "in itself an evil

* Instances of systematic competitions in depravity by the competitors within the field are given in the evidence appended to the Report of the Commons Committee on Public-houses, 1854. Thus the Superintendent of the police of Leeds, states (3363-69) it to be a practice which he detected and brought before the magistrates, for a number of boys from 16 to 18 years of age, and also young girls of corresponding ages, to assemble on an evening at the beershop after they left the factories, and "they were in the habit, twelve of them, of putting down a "penny a piece and then throwing dice in a basin or a milk bowl, and the one that "threw the highest number was the winner of the prize—and that prize was that "he could select any of those girls and take her up stairs for prostitution!" In spite of convictions, such practices continued to prevail. The competition is often carried on in the receipt of stolen goods; in rural districts, in farmyard produce; in towns, manufacturing produce. The police Superintendent of Leeds states (3,255) that "many are receivers of stolen property. I have found stolen property "in their houses. Even in an extensive robbery, I found a great portion of the "cloth in his beer barrels. I went down into the cellar, and the beerseller said, "'These barrels contain bitter beer.' I said 'Give me a pot, I am very fond of "bitter beer: let me taste it.' I found that the heads against the wall were out, "and that they were filled with stolen cloth. The result was that the man was "apprehended and he was transported for ten years," after having been previously convicted several times for harbouring notoriously bad characters. The great bulk of the convictions for every species of offence was in the lower class of houses.

“ of the first magnitude, not only by increasing the temptations to excess which are thus presented at every step, but by driving houses, even those under the direct control of magistrates, as well as others originally respectable, to practices for the purposes of attracting custom which are degrading to their own character and most injurious to morality and order.”

The perceptions of the bakers of the *banlieue* of Paris, as to the means of preventing the sinister exercise of the power of large dealers or producers, stand out in marked contrast to those of the Committee of the House of Commons on public-houses. That Committee, disregarding the evil effects everywhere manifest from competitions within the field, actually proposed to extend them still further, to all persons of good character, *i.e.*, to all persons not convicted of any offence,—as if the Committee had not had widely displayed in the evidence the working of such competitions in subjecting the competitors to degrading influences, destructive of any good characters exposed to them ! as if it were not proved that that sort of competition, by subdividing the field of supply, and by making and keeping the half of the competitors poor, drives them into debt and makes them more dependant on the large producers or the great brewers, whilst it impairs the just and salutary powers of those same large brewers to protect the commodity from adulteration for the sake of their own character, if not for the sake of the consumers !

The pressure of taxation on the Englishman has been described, and that is heavy enough, in so far as relates to those taxes which are taken without a due return of service ; yet when they are taken there is an end. But there is no end to the excess of charges to which, in the absence of regulation he is subjected,—charges exceeding, as already indicated, all governmental taxation whatsoever, and accompanied by restrictions and interferences with his private life and daily business,—frequently more vexatious and degrading than any but the most barbarous misgovernment. We hear boasts that he is opposed to monopolies, and has the highest amount of freedom, in the face of the fact, that practically he is everywhere in large cities subjected to restrictions and to multiform monopolies of an imperious character, confining him to inferior service at high prices ;—in the face of the fact that his freedom of choice, where he really has any, between several competing means, is commonly as a free choice of several rotten oranges. If he be of the lower, middle, or of the wage class, he is Restricted to a residence within the district of his calling and there of new houses he has only a choice of those which are “scamped” by the competition of small jobbing builders ;—ill-drained, cesspool-tainted, with spongy and damp walls, ill-warmed, ill-ventilated, disease-engendering, frequently smoky, and highly-rented as compared with the price at which good habitations might

be produced. In his Food he has little choice, but of the dear, and adulterated, "distressful" bread of the competing small bakers. All this time, dripping, and inferior commodities are exported to Holland, there to be manufactured with little more than one-third of genuine butter, expressly for the English market, to meet the demands of the competing small butter sellers of the poorer neighbourhoods, where it is sold as full-priced Dutch butter. His animal food may not admit of adulteration, but diseased cattle.—which if attempted to be sent to the public abattoirs of Paris would be confiscated and killed to feed the vultures or the wild beasts, the consumers of carrion at the menageries,—may be exported for what is proved to be a second market in London for sale to him by the competing butchers of the poorer districts on the Saturday night.* If he would avoid drugged Beer he has frequently only the alternative of adulterated tea, or the coffee of competing grocers. If, being temperate, he would drink Water, he has commonly the alternative of the clear, but most dangerously cesspool-tainted water of the wells, or the water of monopolist companies, originally competing of five or six-fold the impurity beyond a correct standard available as a service at a lower rate. If Wine be prescribed to him medicinally, he has great difficulty in obtaining it pure from the competing dealers of the poorer neighbourhoods, to meet whose demands there are in France large manufactories of sophisticated wine expressly for consumption—at high prices—in England, but from the sale of which the population of France is protected. If when the constitution of the Englishman, or that of any of his children, who are nourished on adulterated or innutritious Milk, and of whom one-half are in their graves before their sixth year,—breaks down under these noxious influences, he seeks medical relief and obtains the prescription of a physician; to get it made up he has the choice, not now of one poor "caitif wretch" of an apothecary, but of two or three made "caitif," and "wretched," and rapacious by competing within the field, from whom the odds are that he will receive, if not a poison, a vile counterfeit at an exorbitant price. (*Vide* the evidence of Dr. A. H. Hassell and Dr. Challice, and others, given before the Committee of the House of Commons, on adulterations.) The Englishman is everywhere surrounded with snares, from which it is scarcely possible, even for persons of professional knowledge, and with appliances, to escape without a degree of labour, of investigation, and verification, at every step, which in itself is an intolerable tax. A late editor of the "*Medico-Chirurgical Review*," a man of extensive knowledge, fell a victim to a fever,

* *Vide* the evidence of Dr. Challice on the sale of diseased meat in the poorer districts of London, given before the Committee on Adulteration of Food. He mentions an instance of one of the poorer butchers, "who never eats a morsel of "meat out of his own shop, but always sends to another butcher for it."

caught in a cesspool-tainted house at Brighton, where he had gone for a change of air. If the Englishman be of a condition of life to remove from noxious influences, and would travel by railway in carriages of the first class, he is, under the guise of free competition, subjected to a fare of nearly double the amount at which his Continental neighbours are free to travel with their families in second class carriages, giving as good accommodation under more responsible and safe direction. At the termination of his mortal career his remains fall into the hands of Undertakers, competing within the field, for the interment of the dead, who exact from his survivors double charges for wretched services.

On a subject on which so much dense ignorance and so much of sinister interest and moral, social, and political evils prevail, I shall be found deficient, rather than redundant in proof and illustration. I might extend the illustration to large branches of production and distribution, in which it admits of demonstration that the distributors can only pay themselves or subsist—by cheating. I might comprise in the exemplification, the important service of Insurance, and show the very serious extent to which the object sought—security for the future—is frustrated by the unregulated competition of establishments within the field, and the need of consolidation as the remedy. Many highly sensitive persons who are afflicted by the character of the evils displayed in the conflicts of small capitals, have passionately advocated as a great social desideratum, the entire prevention of competition. I hope to give such minds relief, by showing that those evils may be almost entirely prevented, and large economic advantages achieved, by its Regulation. In other branches than those adverted to, it may be shown that the mere economy of waste will afford the means of a vastly improved service. A first step, however, to voluntary improvement, would be the exercise of an intelligent public opinion, to resist as a common injury the subdivision of fields of supply, unless upon a manifestly adequate case of improvement made out, and then to support consolidations.

It remains to be described on some future opportunity, how much bad morality, anti-social feelings, and painful sense of individual insecurity, pervading and corrupting all society, and extending to the Commons House itself, have their remedies in the advance of correct economic science and sound legislative and administrative principle; the facts cited may serve to show that the advance of economic science will not be by hypothetical assumptions, as to what will be done—in the face of experience of what is not done,—but by well examined and complete collections of facts as to past experience on which to found safe practical rules for future guidance.
